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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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12/03/2003

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EXAMINER

BASHORE, WILLIAM L

ART UNIT

PAPER NUMBER

2176

DATE MAILED: 12/03/2003

14

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/381,899

Applicant(s)

ANDERSSON, JAN

Examiner

William L. Bashore

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 17 September 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1,2,4,5,8-10,13-15,18,19,21,22,25-27 and 30-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5,8-10,13-15,18,19,21,22,25-27 and 30-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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### DETAILED ACTION

1. This action is responsive to the following communications: RCE and amendment, both filed 9/17/2003.
2. It is respectfully noted that examiner Charles Bieneman is no longer examining in art unit 2176. The current examiner of record for this case is William Bashore. Please update future correspondence accordingly.
3. Claims 1-2, 4-5, 8-10, 13-15, 18-19, 21-22, 25-27, 30-32 are pending. Claims 3, 20, 35-40 have been canceled. Claims 1, 4, 18, and 35 are independent claims.

### *Continued Examination Under 37 CFR 1.114*

4. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/17/2003 has been entered.

### *Claim Rejections - 35 USC § 103*

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-2, 4-5, 8-10, 13-14, 18-19, 21-22, 25-27, 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Number 5,293,429 to Pizano et al. issued March 8, 1994 ("Pizano") in view of U.S. Patent Number 5,434,933 to Karnin et al. issued July 18, 1995 ("Karnin"), and further in view of U.S. Patent Number 4,933,979 to Suzuki, issued June 12, 1990 ("Suzuki").

Regarding independent claims 1 and 18, Pizano teaches scanning (*i.e.*, providing) an unknown form. (Pizano, col. 2, lines 64-66; Fig. 1.)

Pizano further teaches generation of a form map based on designs on the unknown form for identifying information contained thereon inasmuch as Pizano's feature extraction is equivalent to the generation of a form map. (Pizano, col. 2, lines 64-66; Fig. 1)

Pizano further teaches searching and comparing the generated form map with stored, registered maps in a map storage means. (Pizano, col. 4, lines 58-67.)

Pizano does not explicitly teach storage of generated form maps in the map storage means when they do not coincide with a stored map according to pre-determined limits for agreement. However, Karnin teaches the storage of image signatures, which are analogous to form maps, as new templates when the image does not match any previously stored template. (Karnin, col. 8, lines 36-38.) One of ordinary skill in the art would have recognized that one might want to be able to match new forms in the future. Therefore, in view of Karnin's teaching it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Pizano to store non-coinciding form maps.

Pizano further teaches indicating agreement according to the limits for agreement when agreement is found inasmuch as Pizano discloses form identification as output when a match is achieved. (Pizano, col. 2, line 67 – col.3, line 2.)

Pizano does not specifically teach text and colors. However, Suzuki teaches both the recognition of characters (Suzuki, col. 6, line 66 – col. 8 line 5) and the recognition of different gradations of tones (Suzuki, col. 8, lines 15-44). One of ordinary skill in the art would have recognized that these features provided the

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benefit of recognizing more and more complex forms. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combination of Pizano and Karnin to include text and colors as objects.

Regarding **dependent claims 2 and 19**, neither Pizano nor Karnin teach the generated form map including an object area list with objects contained in the unknown form. Suzuki, however, teaches the storage of information sets for a set of reading areas, which are analogous to object area lists inasmuch as reading areas identify parts of a form and can contain objects such as text or images (Suzuki, col. 6, lines 1-3, 39-46), and provide the benefit of efficient and accurate form recognition. ((Suzuki, col. 17, lines 42-57.) Thus, it would have been obvious to one of ordinary skill in the art to modify the combination of Pizano and Karnin to use an object area list.

Regarding **independent claim 4**, claim 4 incorporates substantially similar subject matter as claimed in claim 1, and in further view of the following, is rejected along the same rationale.

Pizano discloses “the use of horizontal and vertical lines as features for identifying a form.” (Pizano, col. 3, lines 5-6; Figs. 5 and 6.)

Regarding **dependent claims 5 and 22**, Pizano discloses generating horizontal and vertical keys by dividing the unknown form into a pre-determined number of horizontal and vertical segments along x and y axes, respectively, wherein each segment is equivalent to one horizontal or vertical key position. (Pizano, col. 6, lines 35-51; Fig 5.)

Regarding **dependent claims 8 and 25**, Pizano discloses horizontal and vertical keys constituting line keys used in the searching and comparison step inasmuch as Pizano teaches the comparison of line key patterns during this step. (Pizano, col. 6, lines 36-40; Fig. 5.)

Regarding **dependent claims 9 and 26**, Pizano does not teach but it would have been obvious to one of ordinary skill in the art to modify Pizano to sort regions (*i.e.*, line keys) in the storage means according to the number of markings inasmuch as it would have been obvious to extend Pizano's method of assigning one or no tags to a region (Pizano, col. 6, lines 55-59) to a method that assigns a plurality of tags to a region because one of ordinary skill would have recognized that this would have provided more information for the comparison step.

Regarding **dependent claims 10 and 27**, Pizano does not teach the application of horizontal and vertical keys to objects in the object area list. However, in view of Suzuki's use of object area lists, noted above, it would have been obvious to one of ordinary skill in the art to extend the application of Pizano's use of horizontal and vertical keys, noted above regarding dependent claims 5-6 and 22-23, from lines to objects, because one of ordinary skill in the art would have recognized that Pizano's use of line keys in a co-ordinate system was an efficient and accurate way of locating objects.

Regarding **dependent claims 13 and 30**, Pizano does not teach the comparison of a generated object key constituted by a horizontal and/or a vertical key position with a stored object key during a search procedure. However, in view of Suzuki's use of object area lists, noted above, it would have been obvious to one of ordinary skill in the art to extend the application of Pizano's use of line keys, noted above regarding dependent claims 8 and 25, to object keys because one of ordinary skill in the art would have recognized that such an object key precisely located the position of the object on the form.

Regarding **dependent claims 14 and 31**, Pizano does not teach the sorting of object keys according to a number of markings. However, in view of Suzuki's use of object area lists, noted above, it would have been obvious to one of ordinary skill in the art to extend the obvious modification of Pizano's method to sort line

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keys, noted above regarding dependent claims 9 and 26, to sort object keys according to the number of markings because one of ordinary skill in the art would have recognized that the number of markings gave additional weight in the comparison process.

Regarding **dependent claim 21**, Pizano discloses “the use of horizontal and vertical lines as features for identifying a form.” (Pizano, col. 3, lines 5-6; Figs. 5 and 6.)

7. **Claims 15 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pizano, Karnin, and Suzuki as applied to claims 1 and 18 above, and further in view of U.S. Patent Number 5,642,288 to Leung et al. (“Leung”) issued June 24, 1997, filed November 10, 1994.**

Regarding **dependent claims 15 and 32**, Pizano does not specifically disclose searching resulting a pre-defined number of requested probable candidates for the currently searched form. However, Leung discloses returning a predefined number of matches to the user in the context of a document recognition and handling system. (Leung, col. 10, lines 1-18.) It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the combination of Pizano and Karnin to include Leung’s step of returning a pre-defined number of requested probable candidates for the currently searched form because one of ordinary skill in the art would have recognized that returning too many results would be confusing to the user, and that the more results returned, the less likely that some results would provide a match.

Further, Karnin teaches manual support of the registration process by an operator. (Karnin, col. 8, lines 33-35.) This limitation would have been obvious to one of ordinary skill in the art because one of ordinary skill would have recognized a need to deal with the inevitable occurrence of machine error or imprecision in the comparison process.

*Response to Arguments*

8. Applicant's arguments filed 9/17/2003 have been fully considered but they are not persuasive.

Applicant's arguments concerning Shimotsuji (US 5,815,704) are currently moot.

Applicant argues on page 11 of the amendment that the cited references do not teach pictorial representations and colors. It is respectfully noted that Suzuki teaches both the recognition of characters (Suzuki, col. 6, line 66 – col. 8 line 5) and the recognition of different gradations of tones (Suzuki, col. 8, lines 15-44).

Applicant argues on page 12 of the amendment that it would be difficult to use Pizano's method if line elements are used, and that Applicant's disclosure only discloses importance of the existence of a line element in a predetermined area is of importance. It is respectfully noted that Pizano teaches generating horizontal and vertical keys by dividing the unknown form into a pre-determined number of horizontal and vertical segments along x and y axes, respectively, wherein each segment is equivalent to one horizontal or vertical key position, and Pizano teaches the use of horizontal and vertical lines as features for identifying a form. These teachings are used to teach the limitations of instant claims 4, 5 and 22.

Applicant argues on pages 12-14 of the amendment that the combination of the cited art fails to teach Applicant's invention. It is respectfully noted that Applicant appears to be contrasting said combination with Applicant's invention as described in the disclosure, instead of arguing the instant claim limitations (it is difficult for the examiner to see which limitations in the claims Applicant is referring to).

The examiner acknowledges Applicant's noting on page 14 of the amendment of a commercially successful apparatus. Applicant is respectfully reminded, however, that an Affidavit under 37 CFR 1.132 is required if this issue is to be addressed by the examiner (see MPEP 8<sup>th</sup> Ed. Section 716).



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***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to William Bashore whose telephone number is (703) 308-5807. The examiner can normally be reached on Monday through Friday from 11:30 AM to 8:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Feild, can be reached on (703) 305-9792.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

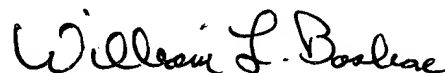
10. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

or faxed to:

(703-872-9306) (for formal/after-final communications intended for entry)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Fourth Floor (Receptionist).



William L. Bashore  
Patent Examiner, AU 2176  
November 30, 2003